FACT SHEET FOR STATE WASTE DISCHARGE PERMIT NO. ST 5063
MIDWAY MEATS INC.

Issuance Date: August 16, 2002

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST5063. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the state include procedures for issuing permits (Chapter 173-216 WAC), and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix C--Response to Comments.

GENERAL INFORMATION	
Applicant	Midway Meats Inc.
Facility Name and Address	1721 Midway Road, Centralia, WA 98531
Type of Facility	Slaughterhouse
Type of Treatment	Land Disposal
Discharge Location	Waterbody name: Chehalis River bottom. Monitoring Well 3 Latitude: 46° 41' 10" N Longitude: 122° 59' 35" W Monitoring Well 4 Latitude: 46° 41' 17" N Longitude: 122° 59' 24" W Monitoring Well 5 Latitude: 46° 41' 10"N Longitude: 122° 59' 09" W
Legal Description of Application Area	63 Acres, SE.SW Section 18 and 19, R2W, T14N, WM
Contact at Facility	Name: Louise Sexsmith Telephone #: (360) 736-5257
Responsible Official	Name: Bill Sexsmith Title: President Address: 1721 Midway Road, Centralia, WA 98531 Telephone #: (360) 736-5257 FAX # (360) 330-2913

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

Midway Meats Inc. first received a permit in 1981. The existing disposal field was shared with National Frozen Foods, another permittee, until 1996.

INDUSTRIAL PROCESSES

Midway Meats Inc. slaughters livestock, mostly cattle, for sale as carcasses. Individuals may also have cattle slaughtered for their use. The facility operates one shift, four days a week, averaging 40 head of cattle processed per day. Production and water use increases in late summer as dairy herds are culled. Cleaning chemicals (potassium hydroxide and detergents) are stored here. Water use for cleaning the facility averages 3500 gpd with a peak monthly use of 8500 gpd. Offal is collected along with the blood and sold to a rendering plant. Wastewater has been dumped on a nearby field where it collects in a natural basin near the Chehalis River. Paunch manure is collected as a slurry and spread over the entire disposal field. It is the intent of this permit to require that the year round disposal of wastewater be discontinued. In place of the current system of disposal, winter storage of wastewater will be required with sprinkler irrigation during the growing season replacing current practice. A new wastewater disposal field has been established nearby where the presence of an existing manure pit provides a reservoir for winter storage of effluent. This is an existing source.

DISTRIBUTION SYSTEM

This permit will require that an irrigation and crop management plan be submitted for approval and implemented in a timely manner. This plan is intended to manage the disposal to minimize the impact of nitrogen and other constituents on groundwater and the nearby river. The field does not discharge to the river, flowing instead to the natural depression in the southern part of the field. The extent of the new disposal field is 63 acres. The soils here are of moderate permeability. The crop produced is hay that is cut and fed to cattle offsite. Water is taken from the Centralia City system and a private well.

GROUND WATER

The slope of the ground water from measurements in the existing monitoring wells (Field 1, Wells 1, 2 and 3) shows a slope from east to west with flow normal to the river. The flow direction of the groundwater flow in the new disposal field (B1) has yet to be determined. These wells shall be named Field B1, Wells 1, 2, 3, 4, 5, and 6.

PERMIT STATUS

The previous permit for this facility was issued on January 25, 1996.

An application for permit renewal was submitted to the Department on June 29, 1999 and accepted by the Department on July 19, 1999.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on August 13, 1998.

No limits were set in the previous permit.

WASTEWATER CHARACTERIZATION, EXISTING DISPOSAL FIELD

The concentration of pollutants in the discharge from sampling wells was reported in the permit application and in discharge monitoring reports. The symbol < means "less than". The following results require some comment. Monitoring Well No. 1 is the background well, located beside Midway road on the east side of the property. Monitoring Wells 2 and 3 are close to the river. Note that the quantitation limit for nitrogenous compounds here (1.0 mg/l) while within the requirements of the existing permit is less than the quantitation limits in the proposed permit. More sensitive testing may lead to better information about nitrogen in the groundwater.

Table 1A: Groundwater Characterization, Monitoring Well No. 1

Parameter	Concentration
$BOD_{5,}$ mg/l	< 3.0
Sodium, mg/l	12.0
Calcium, mg/l	8.0
Magnesium, mg/l	8.0
Ammonia Nitrogen, mg/l	<1.0
Nitrate Nitrogen, mg/l	2.0
Nitrite Nitrogen, mg/l	<0.2
Total Kjendahl Nitrogen, mg/l	<1.0
Total Dissolved Solids, mg/l	143.0

Table 2B: Groundwater Characterization, Monitoring Well No. 2

Parameter	Concentration
$BOD_{5,}$ mg/l	7.0
Sodium, mg/l	10.0
Calcium, mg/l	17.0
Magnesium, mg/l	10.0
Ammonia Nitrogen, mg/l	<1.0
Nitrate Nitrogen, mg/l	0.4
Nitrite Nitrogen, mg/l	<1.0
Total Kjendahl Nitrogen, mg/l	<1.0
Total Dissolved Solids, mg/l	163.0

Table 3C: Groundwater Characterization, Monitoring Well No. 3

Parameter	Concentration
$BOD_{5,}$ mg/l	11.0
Sodium, mg/l	45.0
Calcium, mg/l	15.0
Magnesium, mg/l	9.0
Ammonia Nitrogen, mg/l	< 1.0
Nitrate Nitrogen, mg/l	0.2
Nitrite Nitrogen, mg/l	<0.2
Total Kjendahl Nitrogen, mg/l	< 1.0
Total Dissolved Solids, mg/l	219.0

WASTEWATER CHARACTERIZATION, UNTREATED EFFLUENT

The Nutrient Management Plan characterized the untreated effluent for purposes for establishing irrigation rates. The result was as follows:

Parameter	Value
Sulfate	3 mg/l
Total Phosphorus	418 mg/l
Biochemical Oxygen Demand	4190 mg/l
Total Suspended Solids	860 mg/l
Total Dissolved Solids	900 mg/l
Specific Conductivity	1590 umhos/cm
Ammonia Nitrogen	301 mg/l
Nitrate Nitrogen	<0.2 mg/l
Nitrite Nitrogen	0.7 mg/l
Total Kjeldahl Nitrogen	623 mg/l
pH	6.8
Calcium	16.8 mg/l
Fluoride	58.7 mg/l
Magnesium	10.8 mg/l
Potassium	63 mg/l
Sodium	185 mg/l

PROPOSED ADDITIONAL PERMIT LIMITATIONS

Prior testing of the existing Field and additional monitoring wells under the existing permit has yielded inconclusive results for two reasons. The existing permit required testing only twice during the year, assuming that National Frozen Foods would test the other two calendar quarters of the year. National Frozen Foods did not use the field after the permit was issued, so they did not test. The second reason is that the two riverside wells are difficult to access in the winter. This permit will require that three years testing take place before statistically significant data is obtained for establishing additional permit limits.

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the state. The minimum requirements to demonstrate compliance with the AKART standard will be determined in the Irrigation and Crop Management Plan.

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110).

WATER QUALITY STUDY (TOTAL MAXIMUM DAILY LOAD)

Beginning in 1991, the upper Chehalis River basin from the headwaters to Porter was studied by the Department to establish a Total Maximum Daily Load (TMDL) for pollutants of concern. Water quality data was collected from July to October 1991, and May to September 1992, for the river parameters of concern and to allocate the load among the dischargers. The water quality parameters limited in this TMDL study are ammonia and biochemical oxygen demand. This TMDL was approved by the EPA and was implemented in 1996.

No nonpoint source Load Allocation (LA) above background are provided for the TMDL. This applies to: livestock impacts on the mainstem and on Salzer and Dillenbaugh Creeks and their tributaries; activities that affect ground water quality where the Chehalis River or its tributaries are downgradient; stormwater runoff from urban areas, clean-up sites, and agricultural activities; poor waste handling activities that result in the discharge of waste to the Centralia Reach or its tributaries. Results from monitoring under this permit will be evaluated to see if groundwater discharging to the Chehalis River from either disposal area contributes an ammonia or BOD load to the river, thereby requiring further restriction.

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 4: Ground Water Quality Criteria

Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	500 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L
Nitrate	10 mg/L
pH	6.5 to 8.5 standard units
Manganese	0.05 mg/L
Total Iron	0.3 mg/L
Toxics	No toxics in toxic amounts

The Department has reviewed existing records and is unable to determine if background ground water quality is either higher or lower than the criteria given in Chapter 173-200 WAC; therefore, the Department will use the criteria expressed in the regulation in the proposed permit. The discharges authorized by this proposed permit are not expected to interfere with beneficial uses.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

WASTEWATER MONITORING

The monitoring schedule is detailed in the proposed permit under Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

CROP MONITORING

The Crop is a critical component in many land application systems and is relied upon for removing nutrients, reducing erosion, and maintaining or increasing infiltration rates. Crop monitoring allows a complete mass balance to be calculated to determine the amount of nutrients and salts that are taken up by the crop and removed each season.

SOIL MONITORING

Soils support crop growth and a biological community that removes biochemical oxygen demand and other pollutants that are not removed through treatment prior to application or through crop uptake. Soil monitoring is required to assure that excess nutrients and salts are not residing in the soil column which would be leached to ground water. This testing allows for a more accurate application rate to be determined and minimizes the leaching potential to ground water.

Twice a year sampling was selected as before and after the growing season.

GROUND WATER MONITORING

The monitoring of ground water at the site is required in accordance with the Ground Water Quality Standards, Chapter 173-200 WAC. The Department has determined that this discharge has a potential to pollute the ground water. Therefore the Permittee is required to evaluate the impacts on ground water quality. Monitoring of the ground water at the site boundaries and within the site is an integral component of such an evaluation.

Constituents of Concern:

Constituents of concern are those constituents that are discharged, handled or stored on site at the facility. These include any contaminants that could impair a beneficial use. These also consist of degradation products or contaminants that are released or mobilized during chemical reactions in the environment. For Midway Meats, these parameters include: total nitrogen (nitrate, total kjeldahl nitrogen), total dissolved solids, and chloride. Total organic carbon, iron and manganese are also required monitoring parameters since they are both contaminants and indicate the presence of anaerobic conditions caused by excessive loading of oxygen demanding substances. Ammonia and BOD are measured to monitor possible contribution to the TMDL limited Chehalis River.

Major Cations and Anions:

A complete characterization of ground water quality is essential when making a determination of the impacts a discharge may have on ground water quality. These ions are not necessarily measured to determine compliance, but can provide both the facility and the department with relatively inexpensive, high quality information regarding the impacts to the environment. Natural ground water has a distinct chemical composition which is characteristic of the geologic formation. Cations and anions provide a means of identifying background water quality by delineating a signature based on inorganic constituents. Ionic characterization data can be used to detect water quality changes and trends that may be attributed to a discharge. Inorganic constituents can also provide a check on the reliability of the analyses with a cation/anion balance. Ionic analyses are required to be monitored on a less frequent basis. These analyses provide some of the most meaningful information in terms of evaluating impact to ground water quality. The ions that are required to be monitored annually in the ground water are calcium, magnesium, potassium, sodium, bicarbonate, carbonate, fluoride and sulfate.

Field Parameters:

Field parameters are analytical methods for ground water parameters which can be measured in the field. These include static water level, pH, electrical conductivity, temperature, dissolved oxygen and ferrous iron. These measurements serve several purposes. They can be used to verify when effective well purging has occurred and when ground water has stabilized to assure that the ground water sampled is representative of the water in the aquifer formation. They can be used as a verification of laboratory measurements and can indicate sample deterioration. Additionally, field parameters are used to detect abnormalities, and they can be indicative of ground water contamination.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-216-110).

IRRIGATION AND CROP MANAGEMENT PLANS

The irrigation and crop management plan is required to support the Nutrient Management Plan. This plan shall include a consideration of wastewater application at agronomic rates and should describe and evaluate various irrigation controls.

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.4. as authorized under Chapter 173-240-150 WAC and Chapter 173-216-110 WAC. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the state of Washington. The Department proposes that the permit be issued for 5 years.

REFERENCES FOR TEXT AND APPENDICES

Faulkner, S.P., Patrick Jr., W.H., Gambrell, R.P., May-June, 1989. Field Techniques for Measuring Wetland Soil Parameters, Soil Science Society of America Journal, Vol. 53, No.3.

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology, 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on August 19, 2001, and August 26, 2001, in the Centralia *Chronicle* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on January 25, 2002 in the Centralia *Chronicle* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6285, or by writing to the address listed above.

This permit was written by Gary Anderson P.E.

APPENDIX B--GLOSSARY

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Distribution Uniformity--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Soil Scientist--An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other

aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

APPENDIX C--RESPONSE TO COMMENTS

No comments received.